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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/512,410

10/25/2004

Susumu Hoshi

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08/28/2009

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EXAMINER

MULLIS, JEFFREY C

ART UNIT

PAPER NUMBER

1796

MAIL DATE

DELIVERY MODE

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/512,410	<b>Applicant(s)</b> HOSHI ET AL.	
	<b>Examiner</b> Jeffrey C. Mullis	<b>Art Unit</b> 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 23 June 2009.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                       | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>6-23-09</u> .   | 6) <input type="checkbox"/> Other: _____                          |

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The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-25 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Moczygemba (US 5,227,419).

Patentees in run 2 in column 9, lines 6 et seq and elsewhere discloses a process in which styrene/diene block copolymers having greater than 60% styrene are produced using alkyl lithium initiators and having blocks produced from pure charges of styrene and other blocks produced from mixed charges of styrene/diene containing predominately styrene in the presence of randomizer. Since the applicants specification produces block copolymers having applicants characteristics by processes also having the above features it would reasonably appear that applicants and patentees materials inherently have identical characteristics. Use of applicants stabilizers are disclosed at column 5, lines 7-17. Sheets are produced at column 8, lines 10-11.

When the reference discloses all the limitations of a claim except a property or function, and the Examiner cannot determine whether or not the reference inherently possesses properties which anticipate or render obvious the claimed invention, basis exists for shifting the burden of proof to applicant. Note In re Fitzgerald et al. 619 F. 2d 67, 70, 205 USPQ 594, 596, (CCPA 1980). See MPEP § 2112-2112.02.

Claims 1-25 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Guntherberg, (US 6,162,867), newly cited by applicants.

Patentees in column 13, lines 27 et seq disclose a block copolymer in which styrene is polymerized using an alkyl lithium initiator in the presence of a randomizer following which mixed multiple charges of styrene/diene are polymerized in which high ratios of styrene/diene are used and in which the calculated molecular weight of the homopolystyrene block resulting from polymerization of the pure styrene charge is less than 35,000. Isoprene may be used as the diene in patent claim 9. Lubricants may be added at column 11, lines 54-64. Patent claim 1 under "B" discloses addition of styrene polymers as in instant claim 12. Since applicants produce their materials in a similar manner in their specification examples, identical characteristics are assumed inherent.

When the reference discloses all the limitations of a claim except a property or function, and the Examiner cannot determine whether or not the reference inherently

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possesses properties which anticipate or render obvious the claimed invention, basis exists for shifting the burden of proof to applicant. Note In re Fitzgerald et al. 619 F. 2d 67, 70, 205 USPQ 594, 596, (CCPA 1980). See MPEP § 2112-2112.02.

Applicant's arguments filed 6-23-09 have been fully considered but they are not persuasive.

Applicants are claiming a product, not a process and while the fact that a prior art process may be similar to applicants may constitute evidence that applicants and patentees product are the same, it is clear that use of even very high amounts of randomizer and production of even completely random blocks is not precluded by the limitations of the claims. Applicants point to their previous arguments. However it is not the position of the examiner that the single block copolymer of Moczygemba '419 arising from the initial charge of styrene and initiator reasonably anticipates the claims and it is therefore immaterial that 6.5% of its styrenes may have a degree of polymerization of 30 or more in the single block copolymer produced from the first charge of Moczygembas' initiator. Applicants do not deny that their block copolymer may encompass mixtures of block copolymers and applicants' own analysis in their previous response in the paragraph bridging pages 10 and 11 alleges no limitation missing from claim 1 not present in Moczygembas' block copolymer mixture of run 2 except that applicants' limitation at lines 14-16 of claim 1 is not met in that applicants lower level of the claimed range is supposedly 40% rather than 38%. However, the problem with applicants'

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analysis is that it assumes that none of the step 4 charge of styrene (in admixture with butadiene) will appear as part of a DP=30 or greater block. Moczygemba in fact refers to this block as “tapered” and it is unreasonable to assume that none of the styrene in the step 4 monomer charge will be incorporated into the terminal polystyrene block arising from the final step 5 charge of styrene. In fact even a completely random styrene/butadiene block (such as Moczygemba certainly does not produce) formed from the step 4 charge would contain some active chain ends with strings of multiple consecutive styrene units. Applicants appear to argue that their specification process using lower amounts of randomizer and higher ratios of styrene to diene would lead to some styrene with DP of 30 or more from mixed charges. However, while the amount of DP 30 or more polystyrene may be greater in applicants’ specification process examples for a mixed charge than that of Moczygemba, Moczygemba does not reasonably appear to produce a zero amount of DP 30 or greater polystyrene from their step 4 charge. The tapered (see Moczygembas’ Abstract where patentees explicitly disclose that their block copolymers are “tapered”) block arising from Moczygemba fourth step is increasingly high in styrene toward the end of the fourth step and least a small amount of the fourth step styrene would be expected to combine with the fifth step charge of styrene to form polystyrene blocks having molecular weights higher than that calculated by applicants based on their assumption that none of the step 4 charge of monomer generates any polystyrene of greater than DP 30. While the amount and length of styrene sequences from Moczygembas' mixed charges may be less than that from the mixed charges used in applicants’ specification examples, the claimed characteristics when calculated for applicants specification examples based on the assumption of no DP greater than 30

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material arising from mixed charges is in fact grossly inaccurate and in fact applicants block copolymer A-1 is produced solely from mixed charges. In fact it is not even necessary to assume a mixed charge in Moczygembas process would give rise to a sequence of DP greater than 30 prior to the final pure charge of styrene since even chains with shorter styrene sequences at the terminal end of the block arising from Moczygembas fourth charge will combine with the homopolystyrene block from the fifth charge and only enough styrene from the fourth charge to raise the amount of DP 30 or greater material from 38% to 40% would result in applicants' materials. Applicants argue that Moczygembas' process uses features such as lower ratios of styrene/butadiene, higher temperatures and higher amounts of randomizer than that of applicants specification examples. However despite this Moczygemba does not refer to his blocks as "random" but rather refers to his blocks as "tapered". The examiner's arguments regarding Moczygembas mixed charges applies with even greater force to Guntherberg who use less randomizer and higher ratios of styrene/diene and who also used mixed charges of styrene/butadiene prior to a final pure charge of styrene.

Any inquiry concerning this communication should be directed to Jeffrey C. Mullis M-F, 9-5 pm at telephone number 571 272 1075.

Jeffrey C. Mullis  
Primary Examiner  
Art Unit 1796

JCM

8-25-09

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/Jeffrey C. Mullis/

Primary Examiner, Art Unit 1796